UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
DALLAS, TX 75202

MEMORANDUM

SUBJECT: Response to the National Remedy Review Board (NRRB) Comments for the Grants Chlorinated Solvents Plume Superfund Site

FROM: Samuel Coleman, Director
National Remedy Review Board
5/25/06

THROUGH: Donald Williams
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TO: David E. Cooper, Chair
National Remedy Review Board
U.S EPA

Purpose

This memorandum documents the Region 6's response on the Grants Chlorinated Solvents Plume Site (Site) comments received from the NRRB's advisory committee.

NRRB Comments and EPA Region 6 Responses

NRRB Comment 1

The site information package acknowledges that data characterizing subsurface conditions, contaminant distribution, fate and transport, and risk are limited. These unknowns produce significant uncertainties in the selection, design, and implementation of remedial options and the estimated costs and time frames associated with these options. The Board recommends that the Region consider a ROD that contains a phased approach that allows flexibility in remedy design and implementation as additional characterization and performance monitoring data become available. For example, Phase I could include actions to eliminate exposure to vapors intruding into homes and thermal treatment of the source area. Phase II could include remediation of the Shallow Ground Water Plume Core and Hot Spot Area, along with shallow ground water peripheral plume and deep ground water actions.

EPA Region 6 Response to Comment 1
Region 6 agrees with the Board comment and believes that a phased approach and a ROD providing flexibility during Remedial Design (RD) and implementation will work better at the Site. Using a phased approach, additional site characterization data collected during the early phases will allow a more detailed evaluation of how best to implement subsequent phases and will streamline the work effort and provide the greatest opportunity for cost savings.

A phased approach would allow data collection efforts conducted during early phases of work to provide the evidence necessary to support the selection of MNA for certain portions of the Site. The ROD for the Site will have a contingency to switch to MNA if it can be demonstrated as an effective alternative.

NRRB Comment 2
The Board notes there is uncertainty regarding the existence of dense non-aqueous phase liquids (DNAPL) in the Shallow Plume Core and Hot Spot Area. As a result, the Board understands the concern expressed by the State of New Mexico that the enhanced reductive dechlorination (ERD) remedy may not be sufficiently effective. Therefore, the Board recommends that the Region consider the results of Phase 1 (as recommended in comment #1 above) and investigate the presence or absence of DNAPL in the Shallow Plume Core and Hot Spot Area prior to implementing a final remedy for this area.

EPA Region 6 Response to Comment 2
Region 6 agrees with the Board recommendation and has selected the more aggressive ISCO/with follow-on ERD for the Shallow Plume Core and Hot Spot Area. However, the ROD will be flexible enough to revert to using only ERD if conditions warrant. EPA Region 6 will evaluate ground water data after source removal and if it can be demonstrated that DNAPL no longer exists then EPA with NMED's concurrence will implement only the ERD component for the Shallow Plume Core and Spot Area.

NRRB Comment 3
The Board recommends, based on the results of Phase I and the investigations for the presence or absence of DNAPL, that the Region consider evaluating an alternative which uses ISCO followed by a less extensive ERD component for the Shallow Plume Core and Hot Spot Area. If ISCO is used to treat the Shallow Plume Core and Hot Spot Area aggressively, ISCO could address the potential DNAPL and significantly reduce the high concentrations of volatile organic compounds (VOCs) in ground water. The ERD component could then be optimized, which should result in a reduced number of wells, thus reducing cost. This approach would likely eliminate the bulk of the VOC contamination quickly, but may result in a longer timeframe to achieve cleanup levels. This approach may still be protective and consistent with the NCP expectation to restore ground water to beneficial use in a time frame that is reasonable given the particular circumstances of the site (e.g., given that the shallow aquifer is not currently being used).

EPA Region 6 Response to Comment 3
The EPA Region 6 agrees with the board recommendation and has structured the ROD to be flexible in applying treatment in the Shallow Plume Core and Hot Spot Area.

NRRB Comment 4
The Board recommends that the Region further evaluate the implementation of ISCO as a remedial alternative in the Source Area. In the ISCO alternative presented to the Board for the Source Areas, significant costs are included for soil excavation and disposal, as well as trench dewatering and water treatment. However, the soil excavation and disposal followed by trench dewatering and treatment components may not be required. ISCO can be an effective option for remediating organic contaminants in the unsaturated zone and its use in unsaturated zones is becoming increasingly common, thereby eliminating the need to excavate and dispose of contaminated soils. ISCO also could be used to treat organic compounds in water that collects in trenches. Oxidant injection and mixing directly in the trench would be easily implementable and likely to be successful at this site for oxidizing these contaminants, as well as for providing residual oxidant to the underlying aquifer through infiltration. Potential limitations to using the ISCO technology at the site given subsurface conditions at the site (soil, geologic, and hydrologic settings), as expressed by the New Mexico Environmental Department (NMED), also need to be considered. Further evaluation of these technical issues is recommended.

EPA Region 6 Response to Comment 4
EPA Region 6 agrees with the Board recommendation and further evaluated the ISCO alternative for the Source Area. However, given the soil conditions at the site Region 6 believes that Thermal Treatment is a better technology than ISCO for treating the Source Area. Thermal Treatment will remove the principal waste in a relatively very short time frame compared to ISCO that will require at least six years.

NRRB Comment 5
The Board agrees with the Region's preference not to include a zero-valent iron permeable reactive barrier as part of the preferred alternative. The clay and thin sandy layers present at the site may not lend themselves to this technology. Smearing of the clay along the face of the trench during excavation could significantly decrease permeability. Also, a barrier containing 100% iron and constructed to depths of 60 feet would need further study to demonstrate implementability and effectiveness. The Board recommends that the Region include a discussion of the potential limitations of installing such a deep trench and the likely decrease in permeability due to the 100% iron composition of the barrier in the decision documents to further explain its preference against this alternative.

EPA Region 6 Response to Comment 5
Comment Noted. The ZVI-PRB alternative is very expensive and would be extremely disruptive to the community when installed in a residential area. The recommended discussion will be provided in the decision document.

NRRB Comment 6
As part of the Region's preferred alternative presented to the Board, vapor intrusion mitigation systems would be installed in three residential structures. Long-term indoor air

monitoring would be undertaken at a larger number of residences situated above the ground water plume. Given the high costs of air monitoring in relation to the mitigation systems, the Board recommends that the Region consider expanding the installation of mitigation systems to all residences potentially impacted by indoor air contamination. In the event that long-term monitoring is chosen, homes above and in the proximity of the ground water plume, especially the homes near the Source Area, should be monitored to take into account preferential subsurface pathways that may exist at this site. The Board also recommends that the Region consider taking action under removal authorities at those occupied residences with vapor intrusion risks exceeding 1 x 10^{-4} lifetime excess cancer risk.

EPA Region 6 Response to Comment 6
Region 6 agrees with the Board's recommendation and has plans to install vapor mitigation systems in all homes potentially impacted by indoor air contamination (14 homes). However, the Region prefers to address vapor intrusion under its Remedial authority, as the risk is more a long term issue than imminent.

NRRB Comment 7
The Region's preferred remedial alternative for indoor air consists of the installation of three vapor mitigation systems and an indoor air monitoring program for a minimum period of five years. If the Region decides to implement the air monitoring program as described to the Board, then indoor air samples will be collected from within 14 structures overlying the groundwater plume where it exceeds a concentration of 1,000 ug/l perchloroethylene (PCE) in ground water. The Board suggests that the area to be considered for indoor air monitoring also be based on concentrations of trichloroethylene (TCE) in ground water. The Board recommends this because the Region's indoor air preliminary remediation goals (PRGs) are based on PCE *and* TCE, and the risks from TCE appear to be driving the indoor air response action more than PCE. The Board also recommends that the Region not define the study area too narrowly, considering the uncertainties in the correlation between TCE concentrations in ground water and vapor concentration.

EPA Region 6 Response to Comment 7
The text of the FS report was modified to provide for indoor air monitoring of structures overlying portions of the ground water plume exceeding PCE and/or TCE concentrations of 1,000 ug/L.

NRRB Comment 8
It is unclear from the package presented to the Board whether benzene, toluene, ethylbenzene, xylene, and methyl tert-butyl ether (MTBE) are contaminants of concern for the site, because they are related to a different source and are being addressed by NMED-Petroleum Storage Tank Bureau. Similarly, the package does not provide much information on bromoform, but it is also identified as a contaminant of concern. The Region should be clear in decision documents whether these contaminants are actually contaminants of concern for the site. If they are, then remedial goals addressing these contaminants should be developed.

EPA Region 6 Response to Comment 8

MTBE was not identified as a contaminant of concern (COC) for site ground water within the Baseline Human Health Risk Assessment Report (BHHRA). BTEX compounds were identified as COCs for the site within the BHHRA, but the FS report discusses the fact that the BTEX compounds are being addressed separately under the NMED Petroleum Storage Tank Bureau (PSTB). BTEX compounds that are co-mingled in the chlorinated solvent plume will be addressed as part of the remedy. However, Region 6 is concerned that BTEX remedial goal will not be attained in areas that are not co-mingled. Therefore no specific remedial goals have been set for BTEX.

Bromoform was identified in samples submitted to the Contract Laboratory Program (CLP) labs during the Remedial Investigation, but was not detected in split samples submitted to a separate laboratory. Bromoform is not considered a common laboratory contaminant, but is one of three trihalomethane compounds commonly associated with water disinfection processes. A determination of the presence or absence of bromoform in site ground water is anticipated during the Preliminary Field Investigation.

NRRB Comment 9

The Board recommends that the cost estimates provided be reviewed and, as appropriate, revised to ensure accuracy and consistent consideration of costs in the decision documents. The following are specific concerns identified by Board members that should, at a minimum, be addressed in this cost review:

a. Ground water pump and treat costs for the three zones are shown as individual cost estimates in the package. The decision documents should also contain information on the cost for pump and treat as a stand-alone, site-wide remedy. This alternative can clarify that all ground water pump and treat costs are not cumulative; for example, the cost to install the treatment plant will not be incurred a second time if pump and treat is selected for both Shallow Ground Water Plume Core and Deeper Ground Water.
b. The thermal treatment costs are not sufficiently itemized and appear to be low, based on the experience of other Regions.
c. The costs to conduct five-year review evaluations appear to be over-estimated based on the experience of other Regions.
d. The O&M for vapor intrusion remediation should not be zero, as the cost of blower replacements should be considered.
e. It was unclear to the Board how cost of treatability studies was included.
f. Costs for the ISCO alternative for the Source Area appear to be over-estimated based on the experience of other Regions. See comment 4 on components that may warrant reconsideration.

EPA Region 6 Response to Comment 10

The EPA has reviewed the cost estimates as recommended by the Board and has the following responses to the specific concerns raised by the Board:

a. Region 6 has evaluated the pump and treat costs for the three zones as a stand-alone, site-wide remedy. However, based on site characteristics, the region did not include this stand-alone remedial alternative in the Record of Decision.

b. The thermal treatment costs are based on two separate vendor quotes and were increased based on the contractor's experience with costs for drilling in New Mexico. The vendors did not provide a detailed breakdown of costs but the contractor has provided a more detailed cost estimated to Region 6. One potential reason for a reduced estimated cost for thermal treatment at the GCSP site is the low permeability of the shallow aquifer leading to a low flux of recharge water through the treatment zone which otherwise create a significant cooling effect.
c. The Five-Year Review costs are comparable to other sites in the region. The region expects that after the first Five-Year Review subsequent review costs to be lower.
d. The region has included O&M Costs for vapor mitigation systems and provided these in the Record of Decision.
e. Treatability studies (pilot-scale tests) of applicable treatment technologies were included in the estimated costs for 'Pre-Construction Activities' within the summary cost tables provided in the FS report.
f. Region 6 has requested the experts at the National Risk Management Research Laboratory, Ada, OK, to review costs for the ISCO alternative in the Source Area. Any revisions to the estimated costs will be updated as part of the Remedial Design.

NRRB Comment 10
Based on the information presented to the Board, the Board understands that the Region has been planning to implement the remedy in the primary Source Area while leaving the relatively large building housing the dry cleaner in place. Because the effectiveness of the shallow ground water remedy is dependent on thorough removal of the Source Area, the Region should fully evaluate the effectiveness of any remedy for the area under the building.

EPA Response to Comment 10
While Source Area treatment would be greatly simplified (and less expensive) without an overlying building, the thermal treatment and the other alternatives considered in the FS are effective even with the building in place. The region evaluated the implementation of the Source Area remedy without the dry cleaner building in place. However, cleanup can be accomplished without removing the building. This reduces EPA costs and any hardship to the business related to removing the building.

NRRB Comment 11
The Board notes that the New Mexico soil screening guidance is not an Applicable or Relevant and Appropriate Requirement (ARAR). It might be a "to be considered" guidance under the National Contingency Plan for the soil cleanup itself. The Board recommends that the Region explain the role, if any, of the soil screening guidance in selecting soil cleanup levels for ground water protection, where maximum contaminant levels are ARARs at this site.

EPA Response to Comment 11
Region 6 agrees that New Mexico soil screening levels (SSLs) are not ARARs, but they are To-Be-Considered (TBC) criteria. However, NMED has clearly stated that because of the

residential setting at the site soil cleanup should be performed to protect the public from exposure to contaminated soil.

NRRB Comment 12

The preferred alternative includes monitored natural attenuation (MNA) as a contingent remedy. However, no data were presented to the board to demonstrate that MNA is occurring or will occur in the future; consequently, the Board cannot evaluate the effectiveness of MNA. However, based on the presentation and discussion at the meeting, the Board recommends that the Region consider MNA as a component of the preferred alternative which will follow active remediation rather than as a contingent remedy if the active remedy does not work. Active remediation can be used to significantly reduce the mass of contamination, with the MNA component used to achieve final cleanup levels. The Board recommends that the Region clarify in the decision documents how MNA may be triggered and its technical basis, consistent with Use of Monitored Natural Attenuation at Superfund, RCRA, Corrective Action, and Underground Storage Tank Sites, OSWER Directive 9200.4-17P, April 21, 1999.

EPA Response to Comment 12

Region 6 will evaluate the site conditions to determine if monitored natural attenuation (MNA) is a viable remedial alternative during the Five-Year Review reporting period. Once source control has been established in the source areas and Shallow Ground Water Plume data indicates evidence of MNA, EPA, with NMED concurrence, may switch from the active remedy to MNA for the Shallow Ground Water Periphery and Deeper Ground Water Plume. The ROD for the site documents the stated language.

NRRB Comment 13

The Board notes that one of the costs associated with site cleanup appears to be payment of State tax on engineering services. The Board encourages the Region's efforts in working with the State to reach agreement on issues involving a waiver of this tax. The Board recommends for this situation that the Region ensure that the New Mexico tax be handled in a manner that is consistent with the Agency's ongoing cost management initiative.

EPA Response to Comment 12

Comment noted. Region 6 will continue to pursue relief from the tax where appropriate with the New Mexico Department of Taxation and Revenue regulations.

Region 6 thanks the NRRB for the recommendations and appreciates the value it brings to the Superfund Program. Please call me at (214) 665-6701 should you have any questions.

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